LAND

SYSTEM 4

SGx and SFx Close-Up Lenses

User Guide

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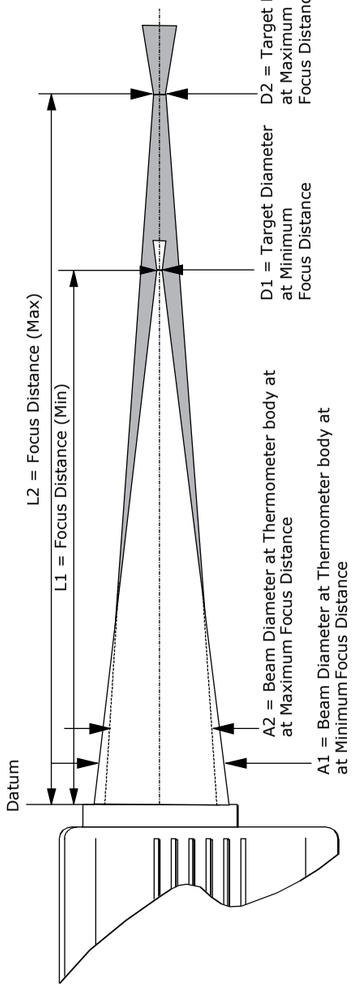
PROCESS & ANALYTICAL INSTRUMENTS

System 4 Close-Up Lenses - Target Size Diagram



System 4 Close-Up Lens Assembly - Part Numbers and Nominal Focus Distances

Thermometer Type	A1	A2	SG1			SG2			SG3			SG4			SG5		
			L1	D1	L2	D2	L1	D1	L2	D2	L1	D1	L2	D2	L1	D1	L2	D2	L1	D1	L2	D2
M1 600/1600C	27	23	90	0.9	115	1.2	110	1.1	145	1.5	135	1.4	205	2.1	185	1.9	320	3.2	225	2.3	480	4.8
M2 300/1100C			95	1.0	115	1.2	115	1.2	155	1.6	145	1.5	215	2.2	195	2.0	335	3.4	240	2.4	540	5.4
M4 150/550C			90	1.8	115	2.3	110	2.2	145	2.9	135	2.7	205	4.1	185	3.7	320	6.4	225	4.5	480	9.6
R1 600/1600C																						
M1 800/2600C	20	17	90	0.5	115	0.6	110	0.6	145	0.8	135	0.7	205	1.0	185	1.0	320	1.6	225	1.2	480	2.4
R1 1000/2600C																						
M4 50/250C	35	31	95	3.2	115	3.9	115	3.9	155	5.2	145	4.9	215	7.2	195	6.5	335	11.2	240	8.0	540	18.0
Thermometer Type	A1	A2	SF1				SF2				SF3				SF4				SF5			
			L1	D1	L2	D2	L1	D1	L2	D2	L1	D1	L2	D2	L1	D1	L2	D2	L1	D1	L2	D2
M5 400/1300C	35	31	95	1.0	115	1.2	115	1.2	145	1.5	140	1.4	205	2.1	190	1.9	330	3.3	225	2.3	500	5.0
M5 1000/2500C																						
M6 0/300C	35	31	95	3.2	115	3.9	115	3.9	145	4.9	140	4.7	205	6.9	190	6.3	330	11	225	7.5	500	16.7
M6 100/700C	27	23	95	1.0	115	1.2	115	1.2	145	1.5	140	1.4	205	2.1	190	1.9	330	3.3	225	2.3	500	5.0

System 4 Close-Up Lens Assembly - Part Numbers and Nominal Focus Distances

Lens Assembly	Part No	Nominal Focus Distance (mm)			
		All M1, M2 and R1 Variants	All M4 Variants	All M5 Variants	All M6 Variants
SG1	030.046	105	105		
SG2	030.047	135	140		
SG3	030.048	175	180		
SG4	030.049	250	260		
SG5	030.050	325	340		
SF1	030.396			110	110
SF2	030.397			135	130
SF3	030.398			175	170
SF4	030.399			255	250
SF5	030.400			320	315

System 4 Close-Up Lens Assembly - Focus Range Table

Lens fitting and Calibration check

Important Note

System 4 Close Up lenses are designed to be used on small targets. Large area (>4cm diameter) targets at temperatures higher than 1600°C may cause permanent damage to the lens if the target distance is less than 10cm.

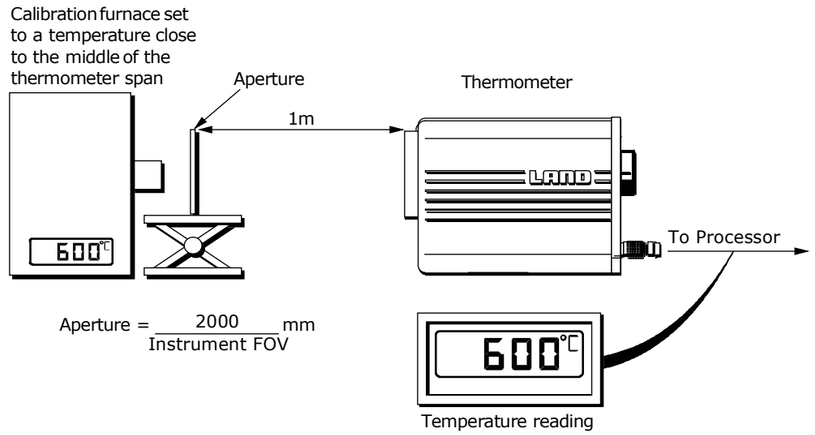
1) Lens fitting and thermometer calibration must be carried out in a clean (laboratory) environment by suitably qualified personnel.

2) A large aperture calibration furnace (e.g. Landcal P550P, LSF) *must* be used, along with the appropriate aperture.

3) The nominal focus distance for each lens is given in the Focus Range Table.

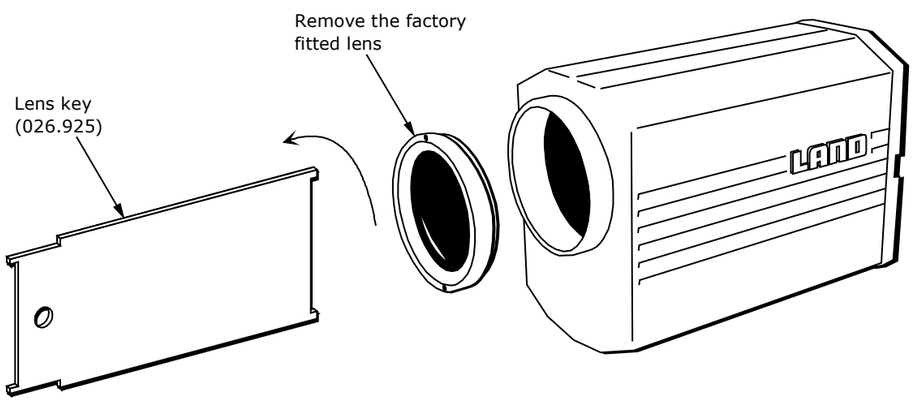
Step 1 - Check the calibration temperature

1) Position the thermometer 1m away from the aperture (See illustration)
2) Focus the thermometer on the aperture and align with the centre of the aperture.
3) Note the temperature reading.



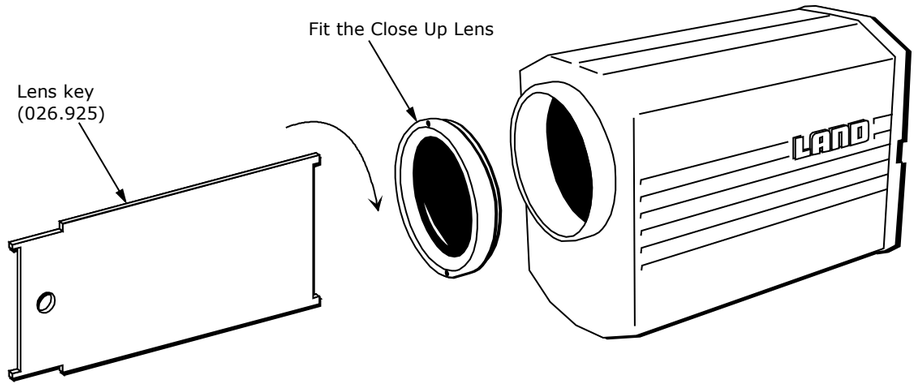
Step 2 - Remove the factory fitted lens

1) Use the lens key to unscrew the lens.



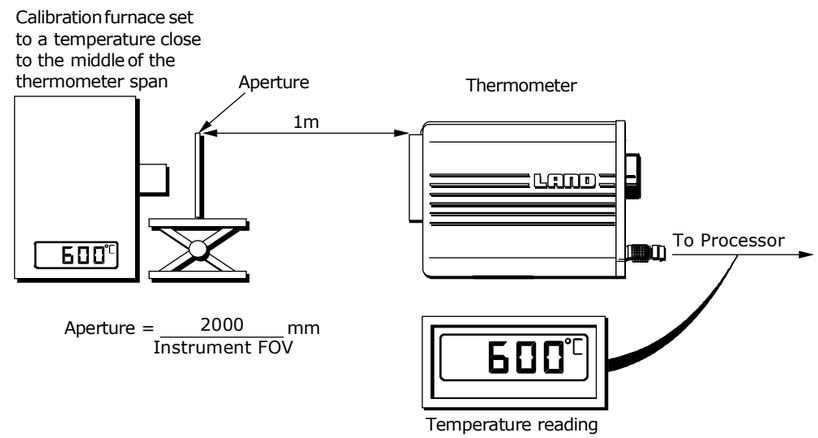
Step 3 - Fit the new Close-Up Lens

1) Use the lens key to screw the Close Up Lens into the thermometer.



Step 4 - Check the Thermometer calibration

1) Position your thermometer in front of the calibration furnace at the nominal focus distance.
2) Focus the thermometer on the aperture and align with the centre of the aperture.
3) Check that the temperature reading corresponds with that recorded in Step 1. (If not, go to Step 5).



Step 5 - Adjust the user gain trim (if necessary)

1) Remove the single screw adjacent to the eyepiece
2) Use a potentiometer trimmer to adjust the gain trim control (on the rear face of thermometer)
3) Adjust the gain until the temperature reading corresponds with that recorded in Step 1.